

REMARKS

I. Status of the claims

Claims 26-83, 85, 93, 104, 106-108, 111, 112, 117-124, 126, 135, 136, and 138 are pending. Claims 26-83 and 85 are withdrawn from consideration. Claims 1-25, 84, 86-92, 94, 95, 96-103, 105, 109, 110, 113-116, 125, 127-134, 137 are canceled without prejudice or disclaimer (claims 96-103, 105, 109, 110 are canceled herein by way of this paper). Applicants reserve the right to pursue any of the canceled subject matter in one or more continuing applications. Claims 93, 96-112, 117-124, 126, 135, 136, and 138 are under examination.

Applicants amend claims 93, 104, 117, 122, 135, and 138.

Claim 93 is amended primarily for grammatical reasons and to better clarify that the claimed recombinant human chromosome is "isolated" and to clarify the chromosomal location of the recited antibody genes. Hence, Applicants clarify in claim 93 that (i) a chromosome #14 fragment comprises the human antibody heavy-chain gene, (ii) a chromosome #2 fragment comprises the human antibody light-chain kappa gene, and that (iii) a chromosome #22 fragment comprises the human antibody light-chain lambda gene. Support for these amendments is found throughout the specification. See, for instance, paragraph 92: "The chimeric mice or their progenies that retain human chromosomes #2, 14 and/or 22 (or fragments thereof) which can be produced by the method of the present invention can retain the greater part of the functional sequences of respective genes for **human antibody heavy chain on chromosome #14, light chain kappa on chromosome #2 and light chain lambda on chromosome #22**" (emphasis added).

Claim 104 is revised for grammatical reasons, concerning the phrase "SC20 chromosome fragment."

Claim 117 is amended for grammatical reasons concerning the recitation of the SC20 fragment and its corresponding depository accession number and to clarify that it comprises the human chromosome #14 centromere.

Claims 122 and 138 are amended to delete "or functional variant thereof."

Claim 135 is amended to clarify that the recited cell is "isolated" and that the recombinant chromosome is a "human" recombinant chromosome.

These amendments are fully supported by the specification and the original claims and do not introduce any new matter. Accordingly, Applicants respectfully entry of these amendments.

II. The objection to claims 100, 103, and 105 are moot because these claims are canceled

Since Applicants have canceled claims 100, 103, and 105, the Examiner's objections at page 3 of the Office Action are moot.

III. Claim 135 is amended to clarify the claimed cell is "isolated"

Claim 135 is rejected under 35 U.S.C. § 101 because the claim allegedly did not "sufficiently distinguish between cells that would occur in vivo and in vitro." Office action at pages 3 and 4. Applicants thank Examiner Ton for suggesting that amending claim 135 to indicate "the hand of the inventor" would obviate this rejection. Accordingly, they amend claim 135 to indicate the cell is "isolated." Applicants believe this rejection is overcome, therefore.

IV. The claims are enabled for "isolated" and "human" chromosomes and genes

Claims 93, 96-112, 117-124, 126, 135, 136, and 138 are rejected under 35 U.S.C. § 112, first paragraph. See the rationale at pages 5 and 6.

Examiner Ton indicated that these claims are enabled for "isolated" recombinant human chromosomes and cells and for the method for producing the recombinant human chromosome using human genes and fragments. Please see the opening paragraph under Section 112.

In a good faith effort to expedite examination and to advance this case toward allowance, Applicants have revised the claims to ensure they comport with the Examiner's acknowledgement of enablement. Accordingly, the claims are drawn to isolated chromosomes and cells, and the claimed methods clarify the source of the various genes and fragments as being human and explicitly name one fragment as being the "SC20" fragment, for which the Examiner acknowledged satisfies enablement (page 7, lines 15 and 16). For these reasons, Applicants assert that this rejection is overcome and respectfully request its withdrawal.

Claims 122 and 138 are rejected under 35 U.S.C. § 112, second paragraph because the term "functional variant thereof" lacks a written description. Office Action at page 8. Purely for the sake of expediting examination, Applicants have deleted the phrase "or a functional variant thereof" from claims 122 and 138 and therefore this rejection is moot.

V. The claims explicitly correlate chromosome fragments and antibody genes and are therefore not indefinite

Claims 96-98, 100, 104, and 105 are rejected under 35 U.S.C. § 112, second paragraph as indefinite because it is allegedly unclear which chromosome fragment corresponds to which antibody gene. Please see the Office Action at page 10. Accordingly, Applicants have amended the claims to explicitly correlate chromosome fragment with gene. Please see Applicants comments pertaining to their claims 93 and 104 amendments, in subsection I above. For this reason, Applicants assert this rejection is overcome and respectfully request its withdrawal.

CONCLUSION

In view of these remarks and amendments, Applicants respectfully consider this application to be in condition for allowance. Applicants invite Examiner Ton to contact the undersigned by telephone if a discussion would further expedite that end. Thus, Applicants would consider canceling the withdrawn claims upon indication of an allowance.

Respectfully submitted,

Date September 19, 2007

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The Commissioner is hereby authorized to charge any additional fees, which may be required regarding this application under 37 CFR §§ 1.16-1.17, and to credit any overpayment to Deposit Account No. 19-0741. Should no proper payment accompany this response, then the Commissioner is authorized to charge the unpaid amount to the same deposit account. If any extension is needed for timely acceptance of submitted papers, Applicants hereby petition for such extension under 37 CFR §1.136 and authorize payment of the relevant fee(s) to the deposit account.